

MATH 7001 ADVANCED MATHEMATICAL INVESTIGATIONS

Credit Points 20

Legacy Code 301176

Coordinator Paul Hurley ([https://directory.westernsydney.edu.au/search/name/Paul Hurley/](https://directory.westernsydney.edu.au/search/name/Paul%20Hurley/))

Description Advanced Mathematical Investigations is an integral part of the Master of Research for students planning a future in mathematical and/or statistical research. Students will carry out extensive investigations under the supervision of an academic staff member that will allow the development of skills, knowledge and a way of thinking that will assist in the learning of mathematics and/or statistics needed for research in their chosen field of mathematics. They will also develop their written and oral communication skills, culminating in a paper which will be written as though it is to be submitted to a mathematics/statistics journal for publication (including following the journal's requirements for presentation) and an oral presentation of the style expected at a mathematics/statistics conference.

School Computer, Data & Math Sciences

Discipline Mathematics

Student Contribution Band HECS Band 1 20cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Postgraduate Coursework Level 7 subject

Restrictions

Students must be enrolled in 8086 Master of Research.

Assumed Knowledge

Undergraduate level of knowledge in mathematics or statistics.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Plan and develop an investigative project.
2. Locate, identify and use information relevant to the problem being studied.
3. Write an extensive literature review.
4. Undertake self-directed study relevant to the problem being investigated.
5. Undertake a theoretical and/or analytical investigation.
6. Write and produce a comprehensive research report in a logical, concise and professional manner.
7. Present a project and its results to an audience in a talk.
8. Prepare results of research for submission to a mathematics or statistics journal for publication.

Subject Content

How to write in a professional manner in mathematics.
Employing LaTeX to write reports/papers and give presentations in mathematics.

Expert knowledge on history/background of chosen field of mathematical research.
Current areas of interest/study and/or open problems in chosen field of mathematical research.
How to write and submit work for publication to a journal in mathematics or statistics.

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Report	25 hours	25	N	Individual	Y
Presentatio	15 minutes	20	N	Individual	Y
Report	25 hours	25	N	Individual	Y
Presentatio	15 minutes	20	N	Individual	Y
Viva Voce	10 minutes	10	N	Individual	Y

Teaching Periods

Autumn (2025)

Parramatta - Victoria Rd

On-site

Subject Contact Paul Hurley ([https://directory.westernsydney.edu.au/search/name/Paul Hurley/](https://directory.westernsydney.edu.au/search/name/Paul%20Hurley/))

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=MATH7001_25-AUT_PS_1#subjects)